U. S. Steel
Clairton Works
400 State Street
Clairton, PA 15025-1855

July 15, 1994

U. S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Department of Environmental Resources
Bureau of Air Quality Control
Executive House -2nd & Chestnut
P.O. Box 2357
Harrisburg, PA 17105-2357

Department of Air Quality
Allegheny County Health Department
301 Thirty-Ninth Street
Pittsburgh, Pennsylvania 15201
ATTN: Roger C. Westman, Ph.D.

Office of Chief Council
Western Region
Department of Environmental Resources
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222-4745

Gentlemen:

RE: #13 Battery Combustion Stack **(Retest)**

This letter serves as a formal notification of our intention to initiate a compliance demonstration program **(Retest)** on #13 Battery Combustion Stack on July 28-29, 1994.

This retest is necessary due to a contaminated sample found during the analysis of the initial test samples. A piece of glass from a chipped funnel used in the probe washing process was found. Additional QA/QC measures have been taken to eliminate a recurrence of this problem.

The sampling methods and equipment employed will be those referenced in 40 C.F.R. Part 60, Appendix A, most recent revision. A proposed test protocol is attached.

Questions regarding this program should be referred to Mr. W. C. Graeser at 233-1467.

Very truly yours,

G. T. Weber, Jr.
General Manager
USS Clairton Works

GTW/BAC
Attachment

TEST PROTOCOL
COMPLIANCE DEMONSTRATION
#13 BATTERY COMBUSTION STACK

USS CLAIRTON WORKS
CLAIRTON, PA

Particulate matter sampling will be performed in accordance with EPA Stationary Source Sampling Methods 1 through 5, Sections 139.11 and 139.12 of the Pennsylvania Department of Environmental Resources (PA DER) Source Testing Manual, and Appendix A of the Amended Installation Permit for USS Clairton Works Nos. 13, 14, and 15 Batteries. Three two-hour tests will be executed during normal operating conditions. Greater than 50 dry standard cubic feet of sample gas will be collected during each test run.

The process exhausts through a 120 inch diameter stack. A total of 24 traverse points (12 per diameter) will be sampled; the traverse points will be calculated in accordance with EPA Method 1. Sampling will be conducted through four equally spaced ports, with six traverse points sampled per port. Each point will be sampled for 5 minutes, thus bringing the total sampling time to 120 minutes.

In accordance with EPA Method 2, velocities and volumetric flow rates of the exhaust gas will be determined using a calibrated S type pitot tube. Positive and negative pitot lines will be leak-checked at the beginning and end of each test run. Gas velocity differential pressures along with stack gas temperatures will be recorded at each sampling point.

At the beginning and end of each test, gas concentrations of CO_2, O_2, and N_2 (by difference) will be determined with the use of a Fyrite apparatus as specified by EPA Method 3. Gas concentrations will be used to obtain molecular weight of the process gas.

Percent moisture content, by volume, of the exhaust gas will determined by measuring the weight gain of the four sample train impingers in accordance with EPA Method 4.

As specified by EPA Method 5, each sample train will be assembled as required by the method, leak-checked on site at the beginning and end of each test run, and operated such that isokinetic conditions are maintained. Clean up of the sampling train will include a

water rinse followed by an acetone rinse of both the front-half and back-half components of the sample train, as per PA DER particulate matter test methods. The water soluble and water insoluble portions of the front-half of the sampling train will be determined as a total; that is, the water rinse will not be filtered to determine soluble and insoluble portions. Front-half acetone and water rinses will be evaporated to dryness, desiccated, and weighed to a constant weight. The water soluble and water insoluble portions of the back-half will be determined separately in accordance with Section 139.12 of the PA DER Source Testing Manual. The back-half water rinses and first three impinger solutions will be combined and then filtered under suction through a preweighed 0.22 micrometer membrane filter. The filter used to capture the insoluble material will be dried, desiccated, and weighed to a constant weight. After filtration, the soluble back-half water will be extracted with chloroform and ethyl ether. The extracts will be evaporated to dryness, desiccated, and weighed to a constant weight. The filtrate, or remaining water from the extraction process, will be evaporated to dryness, desiccated, and weighed to a constant weight. Following the gravimetric analyses for the filtrate residue, the residue will be resolubilized and the solution submitted for sulfate analysis via ion chromatography. Back-half acetone rinses will be evaporated to dryness, desiccated, and weighed to a constant weight. Sample train filters will be desiccated for 24 hours, and particulate matter weight will be determined gravimetrically. Rinse residue weights and filter weights will be measured to the nearest 0.1 mg. One acetone blank and one deionized distilled water blank will be prepared in the same manner as the test sample rinses. The blank residue weights will be subtracted from the test sample residue weights. After blank correction, front-half water and acetone rinse residue weights, sample train filter weights, and back-half water insoluble filter weights will be used to determine total particulate matter catch.

All visible emissions determinations will be performed in accordance with EPA Stationary Source Sampling Method 9. Visible emission readings will be recorded for the duration of each particulate matter test.

A report summarizing the compliance test program will be submitted within 60 days following completion of field work. The report will describe test methodologies utilized and present a textual and tabular summary of the emissions results and related sampling information. Copies of operational data will be included in the report to verify that all testing was performed during periods of normal plant operation. Also incorporated into the report will be copies of the pre-test calibration results, post-test calibration results, the results of an audit conducted with a critical orifice provided by the Allegheny County Health Department - Department of Air Quality, field data sheets for the particulate matter sampling and visible emissions determinations, emissions calculations sheets, and analytical results for each test.